

IN THE CLAIMS

Please amend the claims as follows:

Claim 1 (Currently Amended): A system design support method comprising:

generating a first system specification described in a state transition table form using a state transition unit which includes information relating to an execution control over the system;

generating a second system specification described in an execution control table form which includes ~~an execution processing content in the system as a set of state transition units, based on the first system~~ a set of program state transition units indicating how processing content units are switched upon state transitions, wherein a new processing content unit is added to any one of the program state transition units in consideration of the continuity of transitions in said state transition table; and

converting the second system specification described in an execution control table form to a third system specification having an executable form described in a system description language.

Claim 2 (Original): The method according to claim 1, wherein each of the state transition units includes at least

a current state taken by the system,
an event serving as a cause of the state transition, and
a next state taken by the system upon occurrence of a state transition.

Claim 3 (Original): The method according to claim 2, wherein the state transition unit further includes

a condition that allows a state to make a transition, and

an action to be executed before a transition to a next state.

Claim 4 (Original): The method according to claim 1, wherein the information relating to the execution control includes

a program of which an execution control is triggered in association with the state transition and

a type of execution control over the program, the type of an execution control includes at least

a start of the system,

a forced termination of processing based on an interrupt caused by occurrence of an event,

a pause of processing based on an interrupt caused by occurrence of an event,

notification of an event which notifies that processing is ended, and

a resume from the pause of processing based on an interrupt.

Claim 5 (Currently Amended): The method according to claim 1, wherein the ~~execution processing content includes~~ program state transition units each include at least

a transition that has occurred,

a ~~program during execution~~ current program,

a type of execution control to the ~~program during execution~~ current program,

a program to be executed next, and

a type of an execution control to the program to be executed next.

Claim 6 (Original): The method according to claim 1, wherein the converting comprises

expanding the execution processing content to a specification described in the system description language in accordance with the first rule; and

integrating the expanded specification in accordance with the second rule.

Claim 7 (Original): The method according to claim 6, wherein the system description language includes a specification description language based on C (SpecC).

Claim 8 (Currently Amended): A computer program product comprising:

a computer storage medium and a computer program code mechanism embedded in the computer storage medium for causing a computer to support designing, the computer code mechanism comprising:

a computer code device configured to generate a first system specification described in a state transition table form using a state transition unit which includes information relating to an execution control over the system

a computer code device configured to generate a second system specification described in an execution control table form which includes ~~an execution processing content in the system as a set of state transition units, based on the first system~~ a set of program state transition units indicating how processing content units are switched upon state transitions, wherein a new processing content unit is added to any one of the program state transition units in consideration of the continuity of transitions in said state transition table; and

a computer code device configured to convert the second system specification described in an execution control table form to a third system specification having an executable form described in a system description language.

Claim 9 (Original): The computer program product according to claim 8, wherein the state transition unit includes at least

a current state taken by the system,

an event serving as a cause of the state transition, and

a next state taken by the system upon occurrence of a state transition.

Claim 10 (Original): The computer program product according to claim 8, wherein the state transition unit further includes

a condition that allows a state to make a transition, and

an action to be executed before a transition to a next state.

Claim 11 (Original): The computer program product according to claim 8, wherein the information relating to the execution control includes

a program of which an execution control is triggered in association with the state transition and

a type of execution control over the program, the type of an execution control includes at least

a start of the system,

a forced termination of processing based on an interrupt caused by occurrence of an event,

a pause of processing based on an interrupt caused by occurrence of an event,

notification of an event which notifies that processing is ended, and

a resume from the pause of processing based on an interrupt.

Claim 12 (Currently Amended): The computer program product according to claim 8, wherein the ~~execution processing content~~ program state transition units each includes at least

- a transition that has occurred,
- a ~~program during execution~~ current program,
- a type of execution control to the ~~program during execution~~ current program,
- a program to be executed next, and
- a type of an execution control to the program to be executed next.

Claim 13 (Currently Amended): The computer program product according to claim 8 comprising a code device converting the first system specification described in the execution control table form to the third system specification having the executable form described in the system description language, the code device including:

- a computer code device configured to expand the ~~execution processing content~~ program state transition units to the specification described in the system description language in accordance with ~~the~~ a first rule; and

- a computer code device configured to integrate the expanded specification in accordance with ~~the~~ a second rule;

Claim 14 (Original): The computer program product according to claim 8, wherein the system description language includes a specification description language based on C (SpecC).

Claim 15 (Currently Amended): A design support system comprising:

- creating a system specification model comprised of a specification of a computation and a specification of a communication at a system level;

dividing and distributing partial structures of the system specification model into partial elements of a predetermined architecture to create an architecture model;

combining communication protocols between the partial elements of the architecture based on the specification of the communication to create a communication model;

associating the system specification model, the architecture model, and the communication model each other, and recording the associated model as a system specification;

generating a hardware specification from the system specification;

generating a software specification from the system specification; and

generating a first system specification described in a state transition table form using a state transition unit which includes information relating to an execution control over the system;

generating a second system specification described in an execution control table form which includes ~~an execution processing content in the system as a set of state transition units, based on the first system~~ a set of program state transition units indicating how processing content units are switched upon state transitions, wherein a new processing content unit is added to any one of the program state transition units in consideration of the continuity of transitions in said state transition table; and

converting the second system specification described in an execution control table form to a third system specification having an executable form described in a system description language.

Claim 16 (Original): The design support system according to claim 15, further comprising

forming a system specification model component in order to reuse the component in creating the system specification model, architecture model, and the communication model.

Claim 17 (Currently Amended): A computer program product comprising:

a computer storage medium and a computer program code mechanism embedded in the computer storage medium for causing a computer to support a designing, the computer code mechanism comprising:

a computer code device configured to create a system specification model comprised of a specification of a computation and a specification of a communication at a system level;

a computer code device configured to divide and distribute partial structures of the system specification model into partial elements of a predetermined architecture to create an architecture model;

a computer code device configured to combine communication protocols between the partial elements of the architecture based on the specification of the communication to create a communication model;

a computer code device configured to associate the system specification model, the architecture model, and the communication model, and to record the associated model as a system specification;

a computer code device configured to generate a hardware specification from the system specification; a computer code device configured to generate a software specification from the system specification; [[and]]

a computer code device configured to generate a first system specification described in a state transition table form using a state transition unit which includes information relating to an execution control over the system;

a computer code device configured to generate a second system specification described in an execution control table form which includes ~~an execution processing content in the system as a set of state transition units, based on the first system~~ a set of program state transition units indicating how processing content units are switched upon state transitions, wherein a new processing content unit is added to any one of the program state transition units in consideration of the continuity of transitions in said state transition table; and

a computer code device configured to convert the second system specification described in an execution control table form to a third system specification having an executable form described in a system description language.

Claim 18 (Original): The computer program product according to claim 17, further comprising

a computer code device configured to form a system specification model component in order to reuse the component in creating the system specification model, architecture model, and the communication model.